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HOW TO FORM AND CARRY ON LOCAL ANTI-MALARIAL ASSOCIATIONS

South African Anti-Malarial Association

1912

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The South African Anti-Malarial Association.

How to form and carry on Local Anti-Malarial Associations.

DISEASES BUREAU LIBRARY.

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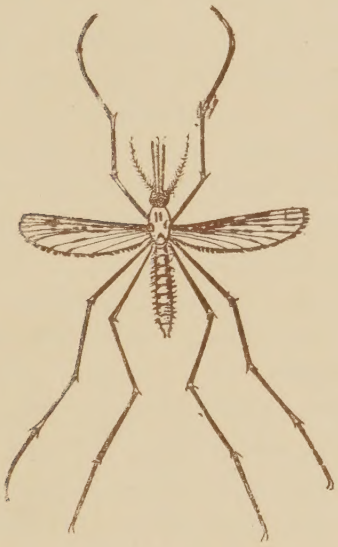

Anopheline Mosquito (greatly enlarged).
This Mosquito conveys Malaria.

Issued by the Executive Committee of the South African Anti-Malarial Association.
P.O. Box 2879, Johannesburg.

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1912.

The South African Anti-Malarial Association.

INTRODUCTORY.—THE OBJECTS OF THE ASSOCIATION.

The South African Anti-Malarial Association was formed three years ago for the purpose of spreading information as to the cause of Malaria, and as to the methods by which it can be prevented, and, by so doing, to assist in the opening up to settlement of vast stretches of fertile country which up to recently were practically uninhabited by Europeans.

The existence of the Association must not be taken to imply that South Africa or any of its Provinces is unhealthy and malaria-ridden. It is a well-known fact that South Africa, taken as a whole, possesses one of the healthiest and finest climates in the world. We should not call New York malarious because there are infected spots on the outskirts of that city; nor could we reasonably describe Italy as a malarious country, although up to recent years the Roman Campagna was one of the worst malaria-ridden districts known. So, in South Africa, as in Italy, the United States of America, Australia and Japan, none of which could be described as malarious countries, we have our infected areas —and in our case these areas include many fine stretches of country practically neglected for European occupation on account of periodical visitations of malaria.

The aim of the Association is to show how malaria can be got rid of, and, amongst the methods used to attain this object, the establishment of local and affiliated Associations in districts subject to visitations of malaria, for the purpose of distributing literature and promoting local and personal

interest in malaria prevention, is one of the most important. Experience has shown that the existence of such local Associations is invaluable in moving local authorities to action that might not otherwise be taken, and in creating that personal interest and enthusiasm which is essential to the success of the movement. It is with the object of stimulating interest in localities where malaria is present, or where outbreaks occur from time to time, and of encouraging the formation of local or branch Associations, that this pamphlet is issued.

It may safely be claimed that the movement directed at the eradication of malaria has made great strides in the past few years. The Central Association has behind it the actual experience gained in South Africa, and the knowledge of the success attained by similar organisations in other parts of the world, and is now especially in a position to help and advise Branch Associations, the establishment of which, wherever needed, cannot be too strongly urged as a necessary step towards the complete success of the propaganda already initiated.

HOW TO FORM AND CARRY ON LOCAL OR BRANCH ANTI-MALARIAL ASSOCIATIONS.

An Appeal for Local Public Spirit.

The first thing, possibly, is to give some reasons why it is worth the while—nay, more, the obvious duty—of public-spirited people to take an active part in this movement. This is really a movement to **exterminate mosquitoes,** because these insects stand convicted of being the carriers of dread diseases of man, notably and certainly Malaria, Yellow Fever and Filariasis, and probably others. The Mosquito is also "suspect" as regards Horsesickness and other diseases of animals. It is in the interests, therefore, of the health and comfort of every dweller in areas where Mosquitoes, and especially disease-carrying Mosquitoes, prevail, actively to assist in their extermination.

Testimony of a Leading Medical Authority.

We make no apology for quoting at some length from a lecture delivered by Dr. W. J. Simpson, C.M.G., before the London Chamber of Commerce. Dr. Simpson pointed out that man was infected with Malaria, Yellow Fever, Filariasis and probably with Dengue, by the Mosquito. No doubt other diseases might be found to swell this list. But if it went no further than Malaria, Yellow Fever and Filariasis, the extermination of the Mosquito in villages and towns, would, by abolishing these diseases, confer on the inhabitants in tropical and sub-tropical regions a benefit almost as great as that bestowed on the civilised world by vaccination.

Dr. Simpson went on to say that the first great step towards the solution of the malarial problem was made in 1880, when Laveran discovered the *malarial parasite*; the next was in 1895 and 1896, when Manson formulated his hypothesis of the

parasite being swallowed by the mosquito when a malarial patient was bitten and then undergoing in the mosquito a new cycle of life; and the third and final stage was in 1897 and 1898, when Ross, by a series of well conceived and brilliant experiments, proved that a cycle of the life of the malarial parasite was actually passed in a particular species of mosquito, that a healthy mosquito of this kind biting a malarial patient drew out and swallowed some of the parasites in the blood of the patient, that these parasites developed in the mosquito and in due course reached its proboscis, and that whenever this infected mosquito bit a human being it injected the parasite lodged in its proboscis into the blood of the person who was bitten and thereby infected the person with malaria.

The scientific application on a large scale of the discoveries of Laveran, Manson and Ross now passed, like other discoveries relating to the causation and spread of disease, into the hands of practical sanitarians, adding one more powerful weapon to those already in their possession in their fight against disease, while its application on a small scale in relation to personal hygiene afforded individuals a safety which they never had before in a malarious country.

It was more easy and more practicable to abolish malaria now than formerly. Simpler, more rapid and more precise methods could be employed than those that proved successful in England at the time it was a malarious country. The drainage and paving which followed the Great Fire of London were the chief methods which changed ague, one of the most fatal and most prevalent diseases in the City, into one which was rare, and the land drainage, cultivation and use of the cinchona bark, another form of quinine, gradually extinguished this disease in the country. But the process was a slow and tedious one, and if these methods alone had to be depended on now there would be little cause for much enthusiasm or rejoicing. But now that the cause and mode of spread of malarial fever were exactly known, there was no difficulty for sanitarians to devise and set in motion methods of prevention which should effectually suppress the disease. In some localities it would be more difficult than others, owing to situation and soil and to the ignorance and habits of the people, but even for these, until reclamation, drainage and education had done their work the new methods would do much to enable the resident to protect himself, if he would, to an extent that was never dreamed of as possible before.

Prevention of malaria was no longer based on

general sanitary measures, though these formed an important part, but it was founded *on a direct attack on the mosquito,* the aim of which was to destroy it completely within the precincts of the village or town. Its life was particularly open to effective attack in its larval stage when it bred in water, and if the campaign was conducted against its breeding places on a well-thought-out plan suitable for the locality it was bound to be successful.

Ismailia, Port Said and Port Swettenham in the Malay States were examples of success effected by a systematic plan of campaign against the breeding places of mosquitoes. Everyone knew the success attending the construction of the Panama Canal by the Americans. The genius of De Lesseps was foiled by malaria, yellow fever and dysentery. The failure was not due to any lack of ability to overcome engineering difficulties, but to the terrible mortality among the men engaged on the work. It was estimated that some 50,000 men perished in that ill-fated enterprise. The Americans decided to combat these diseases, to exterminate the mosquitoes and to carry out large sanitary operations, with the result that the Panama zone had been changed from a pestilential locality into one even more healthy than some of the most healthy places in the United States. With this change the success of the construction of the canal was assured.

Steady and good sanitary administration properly directed, together with education as regards the mosquito and its dangers, would eventually extinguish malaria. "No mosquitoes, no malaria" should be placarded in every school, public building, church, temple, market and assembly place in malarious countries. The children should be taught to recognise the larvæ and the method of destroying them. Boy and girl scouts in every village and town hunting for and reporting where the larval enemy was found would be a means of soon clearing many malarious localities. The duty of preventing malarial prevalence devolved on the individual, on the municipality and on the Government. The measures which the municipality and Government should employ did not come within the scope of these lectures. Those that the European should adopt to protect himself were not numerous, but they were very important, and it was here that the merchants, directors of mines and others could assist in the preservation of the health of their employees. Four things should be provided in a malarious locality: (1) a good mosquito net; (2) residential quarters away from native dwellings; (3) wire net screening for offices if used after sundown, and for residential quarters; and (4) a supply of quinine.

Interest being Enlisted, Formation of Local Association Advocated.

We hope the foregoing has aroused the interest of a public-spirited reader to the point of determining him to interest others until an Association has been formed in the locality for the purpose of furthering the work in a systematic matter in his district.

Our public-spirited friend will doubtless then take this pamphlet and discuss it with a few friends—the Magistrate, the Mayor, the Doctors, the Ministers, the Schoolmaster, the Chairman of the Chamber of Commerce, of the School Board, of the Agricultural and Mining Associations, and other leaders of public opinion. The local Editor must not be left out. He will be a great prop. Those who are sympathetic will give their support to the idea, and the nucleus of a Committee will have been formed that will launch the District Anti-Malarial Association. The proposed Chairman and Secretary are two important persons, and should be secured at this stage if possible. The next step is to convene a public meeting. Take some trouble to secure the attendance of the public and get the ladies there. They are deeply interested in the **Health** and **Comfort** of their families, and opposed, therefore, on principle to Mosquitoes. The Chairman will be an influential man and alive to the importance of the movement. The Resolutions will be ready. The movers and seconders will have primed themselves. Avoid a very formal gathering. Have it in the evening, preferably with music and light refreshments, and a lantern lecture to start off with. The South African Anti-Malarial Association will lend a lantern and slides with descriptive notes and a local medical man would, no doubt, deliver the lecture, or the Association might be able to send a lecturer. After the lecture launch

the Association in a series of Resolutions, such as:—

(1) Resolved to form an Association to operate in the District of ..... to be styled the ..... District Anti-Malarial Association, to be affiliated with, and having the same objects as the South African Anti-Malarial Association.

(2) Resolved to appoint as Chairman, Mr. .....; as Secretary, Mr. .....; as Treasurer, Mr. .....; and as a Committee ..... with power to add to their number.

(3) Resolved that the annual subscription be ..... (say 5s. for each member).

Get as many names as possible in the district as members.

The Association will now be fairly launched upon what will doubtless be a career of useful public service. One of the first steps should be to report the formation to the South African Anti-Malarial Association, the immediate co-operation of which is assured. Call a meeting of the newly-formed Committee as soon as possible. The Secretary will have a list of the first joined members. **Get their subscriptions. It helps them to realise the fact of their membership.** Send out a circular to induce others to join. Select the addresses carefully. The South African Anti-Malarial Association stock a letter for the purpose, which will be supplied to you free of charge, if you will requisition the quantity you require.

PLAN OF OPERATIONS.

After all these necessary preliminaries the Association must get to work. The breath of life to it will be **"Ideas."** It

must always think why it exists and seek to justify its existence. It will do so by carrying out its **ideas.** Let us suggest a few.

(1) **Secure the Co-operation of the Local Paper.**—Get the Editor to report your proceedings, to print contributed articles and press references on the subject at regular intervals. It adds to a paper's prestige to take up a subject of this kind. The Editor will learn a lot and teach his readers. We know one district paper which is now an authority on Mosquitoes and very proud of it. The proprietor is mentioned in a standard work on Malaria, and his happiness is complete. It will pay your local paper to **boom** this movement, besides doing a public service, which is what the Press is mainly out for.

(2) **Form a Little Bit of a Library.**—Get some of the literature on the subject together and get people to read it. "The Prevention of Malaria," Ross (John Murray, £1 1s.), and "Mosquito or Man?" Boyce (John Murray, 10s.), are standard works. They are more, they are extremely interesting. One need not be a scientist to grasp the simple facts relating to Mosquitoes, their life history and habits and their relation to disease.

(3) **Form a Ladies' Section.**—Ladies can meet at each others houses in turn and have "readings" over their tea, followed by discussions. They will get interested, and when their interest is thoroughly aroused, things will get done.

(4) **Approach the Local Authority—Tactfully.** They can do wonders—by draining and cleaning. They can promulgate by-laws for the prevention of insect-borne diseases. They can do practical things. If they are not amenable, approach them through their wives.

(5) **Suggest to the Licensing Court to require Hotel Keepers in Malarial Areas to Mosquito-proof their Premises.** It is a boon to travellers, and it has been done in one district, the hotel-keepers recognising the force of it, and accepting the condition without offering any opposition. It reacted to their benefit, as travellers appreciated the comfort and the safety secured and came in fever season and out of it.

(6) **Insist upon the Subject being Taught to the Children in the Schools.** The Education Department in the Transvaal has authorised the use of a school primer called "The Anopheline Mosquito," by Mrs. R. C. Daughlish, specially written for the South African Anti-Malarial Association, and this book is obtainable at a low price. The School Board should not need much worrying to bring about the teaching of the subject in their schools—but worry them if necessary.

(7) **See that the Publications of the South African Anti-Malarial Association are Distributed to the Best Advantage throughout your Area.** These are printed in English and Dutch, and some in Zulu and Sesuto for the native population. Undertake and organise the distribution. Personal attention and thought are required to ensure good results. Ladies are conscientious and thorough at this sort of work.

(8) **Distribution of Quinine.**—In Malarial Districts the Magistrate distributes quinine and calomel to poor whites and natives. Your members in the outlying parts can assist in this, and the Magistrate will appreciate it.

(9) **Act as a Vigilance Committee** to see that Government provides its servants, railwaymen, police, and so forth, with mosquito-proof dwellings where malaria prevails. The Police and others requiring it

should be supplied with mosquito-proof patrol tents. Government, in all its Departments, should set an example to the community in these respects.

(10) **Organise Lectures,** and have them when possible in conjunction with "At Homes."

(11) **Get the Local Troop of Boy Scouts interested** in searching for and destroying, wherever possible, the breeding-places of Mosquitoes. It is ideal scouting work, in that it stimulates the boys' powers of observation, and if properly instructed, through their Scout Masters, they will get enthusiastic and do most useful service to the comunity.

These are a few ideas. Others will occur to you, but if not, write to the South African Anti-Malarial Association and they will supply more.

FINANCE.

Finance is a perennial difficulty, but it need not be an obstacle to an Association of this kind. A local Association has been run quite comfortably on a subscription of 5s., and 2s. 6d. for ladies. At the same time a few donations in guineas make the treasurer feel more comfortable. You are spared the chief expense, i.e., the production of literature. That is supplied by the South African Anti-Malarial Association, which is satisfied to secure your co-operation in distributing it. The principal and often only expenditure of the local Association is in connection with postages, stationery and local printing. Halls, lights, refreshments and music are usually or frequently procurable without burdening the funds of such Associations.

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A LAST WORD.

You can throughout rely upon receiving the active encouragement and practical support, whenever asked for, of the South African Anti-Malarial Association, the object of which is to extend its propaganda to every part of South Africa in which it can be of use, and which ardently desires to see local Associations spring up and become a force in every part of the country where they can be of service.

Are You Living in a Fever District?

If you are, it is to your interest to assist in the formation of a Branch of this Association in your district.

If circumstances are such as to render the formation of a Branch impossible, you can still help forward the cause by becoming a member of the Central Association, which will entitle you to receive all the Association's publications as issued.

Annual Subscription 10s.

[VOOR HOLLANDSE LEZING, ZIE OMMEZIJDE.]

[Publication Fee, 6d.

DANGER
OF
MOSQUITOES.

MOSQUITOES AND DISEASE.

It has been proved beyond all doubt that Mosquitoes are alone responsible for the conveyance of Malaria, Dengue Fever, and Yellow Fever. These Fevers are transmitted from person to person by certain species of Mosquitoes: Malaria by the species called Anopheline, Dengue Fever by the Culex, and Yellow Fever by the Stegomyia. Moreover, the experiments that have been carried out in South Africa concerning the transmission of Horse-sickness in Horses and Mules and Blue-tongue in Sheep, point conclusively to the fact that these diseases are also carried by Mosquitoes.

Apart from being a constant menace to health Mosquitoes are a source of great annoyance, and their extermination is called for in the interests of personal comfort.

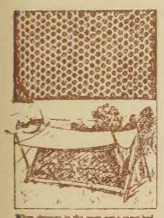
Destroy all Mosquitoes without distinction, and all these Mosquito-borne Diseases will be eradicated.

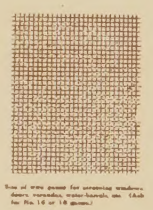
HOW TO DESTROY MOSQUITOES.

1. Mosquitoes breed **only** in water in pools, puddles, tubs, buckets, pots, tins, etc., wherever allowed to contain standing water. **Destroy their breeding places and you destroy the mosquitoes.**
2. Empty the water from all tubs, buckets, tins, vases, etc., once a week.
3. Fill in or drain all pools, puddles, and hollows where water is found to collect in the rainy season.
4. Screen with wire mosquito netting (mesh 16 or 18 to the inch) all openings of cisterns, wells, and tanks of water in everyday use.

(NOTE.—The mesh of netting used is important. A larger mesh than 16 to the inch may not entirely prevent the entry of mosquitoes, whilst a smaller mesh than 18 to the inch unduly retards circulation of air. Phosphor bronze netting, although more expensive at first cost than ordinary painted or galvanized iron netting, is recommended as being much more durable, and cheaper in the end.)

5. Where pools or collections of standing water cannot be filled in or drained, spray the surface of the water with **paraffin**, which forms a film over the surface. The young or larva of the mosquito, known as a "wriggler", lives in water for ten or twelve days, and must come to the surface to breathe. Paraffin sprayed evenly over the surface of the water prevents the "wriggler" from breathing, and it dies. A condensed milk tin of paraffin is sufficient to cover a pool eight feet long by eight feet wide if well sprayed over.
6. Change regularly every week all water in troughs used for watering animals.
7. See that all guttering round the house is in good order, that it does not sag, and is not choked up with leaves or mud so that water collects in it.
8. Clear away all rank weeds and bush around your house and about water-courses, ditches, ponds, and other possible breeding places near your house, since these afford hiding places for the adult mosquitoes. Mosquitoes rarely travel more than half a mile from their breeding places.
9. Collect all old tins, buckets, bottles, jars, broken crockery, etc., around your premises, and have them buried in a convenient hole, which must be filled in.
10. Clear the adult mosquitoes out of your house by burning insect powder in the room, from which all curtains have been removed. The mosquitoes will be stupefied only, but may then be swept up and burnt.
11. Keep your house well lighted and ventilated. Mosquitoes do not like such; they prefer badly lighted and stuffy houses.





HOW TO PROTECT AGAINST THE BITES OF MOSQUITOES.

1. **Always sleep under a mosquito net whether sleeping in a house, hotel, or on the veld.** The net should be carefully tucked in under the mattress, and all the bedclothes arranged on top of the mattress—not tucked in under it—so that, no matter how much the sleeper kicks about the bedclothes, the mosquito net will be undisturbed. (See illustration for proper mesh of mosquito net.)
2. Screen with wire mosquito netting (mesh 16 or 18 to the inch) the windows, doors, and all openings in outside walls of houses and buildings occupied after sunset. (See note above regarding the proper mesh of netting.)

PREVENTION OF MALARIA.

Although the greater part of South Africa is free from malarial fever there are certain areas in which it can be contracted during a portion of the year unless precautions are taken. Persons living in these areas need not fear infection if they observe the following precautions:—

1. Screen the house or bed, or both, with proper mosquito netting, so that mosquitoes cannot enter and bite you. **It is only by the bites of mosquitoes that malaria is spread from one person to another, and the chief danger of infection is at night.**
2. Destroy all mosquitoes and mosquito larvæ, wherever found, by one or more of the methods already described.
3. Take regular doses of quinine during the fever season. Five grains of quinine taken regularly every day acts as a preventive of malaria.
4. Have your native huts, if possible, at least 500 yards away from your own house. The majority of natives, especially the children, are infected with the malaria parasite, and mosquitoes after biting them may convey the disease to you.

Write to the Secretary for further information or literature.

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(Acknowledgment is made to the Liverpool School of Tropical Medicine for Sketches of Mosquitoes.)

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The South African Anti-Malarial Association.

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